

# **North Carolina Department of Transportation**

## **Standard Utility Encroachment Plan Requirements**

### **General**

Only properly formatted, complete drawings with sufficient, applicable information should be submitted with encroachment requests. If proper plans are not submitted, encroachment requests may be returned to the Applicant and encroachment review will not begin until proper plans are resubmitted.

### **Plan Format**

- Plans should be legible.
- Plan sheet size of 11"x17" or 8.5"x11" is preferred. Full size plan sheets should only be submitted if requested.
- Plans should show the entire project limits
- Only applicable plan and detail sheets should be submitted. Plan sheets and details for work outside of NCDOT right of way, including work on City and non-NCDOT maintained roadways should be removed from the submittal.

### **Professional Engineer Seals**

Certain utility encroachment requests require plans to be sealed by a licensed North Carolina Professional Engineer. Guidance on what requests have this requirement can be found in the [NCDOT Policies and Procedures for Accommodating Utilities on Highway Rights of Way](#) and the [NCDOT Utility Policy Manual](#).

### **Plan Title Sheet**

- Location / Vicinity Map: A vicinity map should be included in the submittal to provide a quick and easy reference to the location of the proposed work. The following aspects should be included in the vicinity map:
  - North arrow
  - Roads labeled
  - Proposed work area should be labeled.
- County name
- Contact information: This information should consist of names, telephone numbers, and email addresses of key people involved in encroachment plan development and encroachment construction and should, whenever possible, include a 24-hour contact to address issues during construction.
- Utility owner project number
- Engineering firm information
- Project scope: This information should include a brief description of the work being proposed with a general to and from provided (e.g. "8 inch sanitary sewer along SR 1324 from SR 1875 to NC 431")

### **General Notes**

If included, general notes should not only reflect Utility Owner requirements but also NCDOT requirements.

### **Legend / Symbolology**

All features shown within the plan set should have a corresponding symbol. The legend should include all applicable symbols and linestyles.

### **Detail Sheets**

The following details should be included if applicable:

- Standard Details
  - Aerial detail with minimum vertical clearance: This aerial detail should be included even if the proposed work is an overlash of an existing crossing.
  - Minimum bury depth
  - Road crossing detail for controlled access and/or non-controlled access roadways, depending on which is applicable.
  - Culvert crossing detail
  - Utility Structures – NCDOT product number
    - Applicable details should be provided for handholes, vaults, manholes and other utility structures proposed.
    - Use of a structure included on the [NCDOT Approved Products List](#) is preferred. When using a structure from the NCDOT Approved Products List, the NCDOT Product number should be included with the structure detail.
    - If proposing to use a utility structure that is not included on the [NCDOT Approved Products List](#), the proposed structure must be approved by NCDOT prior to use in the right of way.
    - If utility structures are proposed to be installed within the sidewalk, an installation/sidewalk repair detail should be included.
  - Bore pit detail: This detail should note the standard size and depth of proposed bore pits.
  - Bore detail: This detail should show maximum proposed bore diameter.
  - Other utility details as applicable
- Site-specific Details: Instances may occur when a standard detail is not applicable to a certain situation. In these instances, a site-specific detail should be required to provide more detailed guidance for the situation.

## **General Plan View**

The following aspects should be included on all plan view sheets:

- North arrow
- State routes labeled
- Scale / Dimension: All plans should either be to scale or properly and accurately dimensioned
  - Scaled plans
    - Scale should be shown
    - Scale should be no greater than 1" = 100'
  - Dimensioned plans should be sure to provide the information requested in sections below.
- Facility details
  - Length of the installation or segment
  - Size of the facility
  - Utility material
  - Installation method
  - Utility structures with dimensions, if necessary
  - Bore diameter
  - Bore pit locations
    - Include dimensions of bore pit
    - Offsets from roadway features should be included (i.e. offsets of bore pits from the edge of pavement or back of curb, the right of way line, other relevant roadway features).
- Roadway Details: The following roadway details should be shown on the plan set:
  - Edge of pavement and/or back of curb, with roadway width
  - Right of way line and/or control of access line, with right of way width
  - Guardrail
  - Storm drainage features (e.g. cross drainage pipes, longitudinal drainage pipes, catch basins and drop inlets, driveway pipes, etc.), with culvert diameters
  - Ditch line and/or toe of fill
  - Bridges
- Offsets from proposed facilities: If not clearly conveyed by plan scaling, dimensions should be included to show the offset of the proposed facility from the following roadway features:
  - Edge of pavement or back of curb
  - Right of way line
  - Guardrail
  - Bridge components, including the substructure of the bridge if the encroaching utility is proposed in close proximity to a bridge. Further guidance regarding what is required when proposing a facility in close proximity to a bridge can be found in the [NCDOT Policies and Procedures for Accommodating Utilities on Highway Rights of Way](#).
- Existing utilities
  - Existing at-grade and above-ground utility features should be shown on plans. This includes, but is not limited to, utility poles, hydrants, valves, manholes, handholes, cabinets, etc.
  - Existing underground and above-ground utilities should be shown on plans under the following circumstances:
    - In locations where the presence of existing utilities will prohibit the proposed facility from being installed in accordance with NCDOT alignment preferences (e.g. as close to the right of way line as possible, as far away from the roadway as possible, etc.)
    - In sensitive areas (e.g. near bridges and/or other NCDOT structures, areas of very limited right of way, etc.)
    - In situations where, at the discretion of the NCDOT, existing utility locations will aid in the proper review of the proposed utility installation.
- Distance from encroachment to nearest State route, when placing a single-point installation.

## **General Profile View**

A profile view is required when crossing a roadway. At a minimum, a standard detail should be included to show how roadways will be crossed. The following aspects should be included on all profile view sheets:

- Roadway
- Right of way limits
- The entire crossing section through the right of way
- Minimum vertical dimensions
- Bore pit locations
- Elevations, sizes and materials for potential utility conflicts
- Grade and/or cover on proposed utilities
- Scale of profile view
- Rim and invert elevations for proposed utility structures
- 1:1 slope from the edge of pavement
- Maximum bore diameter